Patent claims

1. Method to generate a print image on a carrier material (40),

in that a hydrophilic layer (52) with a molecular layer thickness is generated on the surface of a print carrier (10) usable for printing,

in a structuring process, hydrophilic regions (68) and hydrophobic regions (64) are generated corresponding to the structure of the print image to be printed,

on the surface of the print carrier (10), a fountain solution layer (54) is applied, whereby a fountain solution layer (54) forms only on the hydrophilic regions (68), such that ink-attracting regions and ink-repelling regions are created corresponding to the effected structuring,

ink that adheres to the ink-attracting regions (64) and that is not absorbed by the ink-repelling (68) regions is applied on the surface,

the applied ink is transferred onto the carrier material (40) in the further course,

before a new structuring process the surface of the print carrier (10) is cleaned and a hydrophilic layer (52) is regenerated,

characterized in that a surfactant layer (52) is applied on the surface of the print carrier (10) to generate the hydrophilic layer.

2. Method according to claim 1, in that the hydrophilic layer (52) on the surface of the print carrier has a thickness of less than 100 nm, preferably less than 10 nm.

3. Method according to claim 1 or 2, in that the application of the hydrophilic substance ensues via rolling, scraping, spraying.

4. Method according to any of the preceding claims, in that the cleaning and the generation of the hydrophilic layer ensues in a single process step.

5. Method according to claim 4, in that hot water and/or water vapor is used for cleaning.

6. Method according to any of the preceding claims, in that radiation is used for structuring.

7. Method according to claim 6, in that the radiation of a laser system, a laser, laser diodes, LEDs or a laser diode array is used.

8. Method according to any of the preceding claims, in that an ink separation ensues before the transfer of the ink onto the carrier material (40).

9. Method according to any of the preceding claims, in that the surface of the print carrier (10) is a generated cylinder surface or a continuous band.

10. Device to generate a print image on a carrier material (40),

in which means are provided via which a hydrophilic layer (52) with a molecular layer thickness is generated on the surface of a print carrier (10) usable for printing,

in a structuring process, hydrophilic regions (68) and hydrophobic regions (64) are generated corresponding to the structure of the print image to be printed,

on the surface of the print carrier (10), a fountain solution layer (54) is applied, whereby a fountain solution layer (54) forms only on the hydrophilic regions (68), such that ink-attracting regions and ink-repelling regions are created corresponding to the effected structuring,

ink that adheres to the ink-attracting regions (64) and that is not absorbed by the ink-repelling (68) regions is applied on the surface,

the applied ink is transferred onto the carrier material (40) in the further course,

and via which, before a new structuring process the surface of the print carrier (10) is cleaned and a hydrophilic layer (52) is regenerated,

characterized in that a surfactant layer (52) is applied on the surface of the print carrier (10) to generate the hydrophilic layer.

11. Device according to claim 10, in which the hydrophilic layer (52) on the surface of the print carrier has a thickness of less than 100 nm, preferably less than 10 nm.

12. Device according to any of the preceding claims, in which the cleaning and the generation of the hydrophilic layer ensues in a single process step.

13. Device according to any of the preceding claims, in which radiation is used for structuring.

14. Device according to claim 13, in which the radiation of a laser system, a laser, laser diodes, LEDs or a laser diode array is used.

15. Device according to any of the preceding claims, in which an ink separation ensues before the transfer of the ink onto the carrier material (40).

16. Device according to any of the preceding claims, in that the surface of the print carrier (10) is a generated cylinder surface or a continuous band.

17. Method to generate a print image on a carrier material (40),

in that a hydrophilic layer (52) with a molecular layer thickness is generated on the surface of a print carrier (10) usable for printing,

in a structuring process, hydrophilic regions (68) and hydrophobic regions (64) are generated corresponding to the structure of the print image to be printed,

on the surface of the print carrier (10), a fountain solution layer (54) is applied, whereby a fountain solution layer (54) forms only on the hydrophilic regions (68), such that ink-attracting regions and ink-repelling regions are created corresponding to the effected structuring,

ink that adheres to the ink-attracting regions (64) and that is not absorbed by the ink-repelling (68) regions is applied on the surface,

the applied ink is transferred onto the carrier material (40) in the further course,

and in that, before a new structuring process the surface of the print carrier (10) is cleaned and a hydrophilic layer (52) is regenerated,

characterized in that the surface of the print carrier (10) has an SiO_2 layer, whereby a hydrophilic layer that comprises SiOH molecules is fashioned via effects of hot water vapor.

18. Method according to claim 17, in that the hydrophilic layer (52) on the surface of the print carrier has a thickness of less than 100 nm, preferably less than 10 nm.

19. Method according to any of the preceding claims, in that the cleaning and the generation of the hydrophilic layer ensues in a single process step.

20. Method according to claim 19, in that hot water and/or water vapor is used for cleaning.

21. Method according to any of the preceding claims, in that radiation is used for structuring.

22. Method according to claim 21, in that the radiation of a laser system, a laser, laser diodes, LEDs or a laser diode array is used.

23. Method according to any of the preceding claims, in that an ink separation ensues before the transfer of the ink onto the carrier material (40).

24. Method according to any of the preceding claims, in that the surface of the print carrier (10) is a generated cylinder surface or a continuous band.

25. Device to generate a print image on a carrier material (40),

in which means are provided via which

a hydrophilic layer (52) with a molecular layer thickness is generated on the surface of a print carrier (10) usable for printing,

in a structuring process, hydrophilic regions (68) and hydrophobic regions (64) are generated corresponding to the structure of the print image to be printed,

on the surface of the print carrier (10), a fountain solution layer (54) is applied, whereby a fountain solution layer (54) forms only on the hydrophilic regions (68), such that ink-attracting regions and ink-repelling regions are created corresponding to the effected structuring,

ink that adheres to the ink-attracting regions (64) and that is not absorbed by the ink-repelling (68) regions is applied on the surface,

the applied ink is transferred onto the carrier material (40) in the further course,

and via which, before a new structuring process the surface of the print carrier (10) is cleaned and a hydrophilic layer (52) is regenerated,

characterized in that the surface of the print carrier (10) has an SiO_2 layer, whereby a hydrophilic layer that comprises SiOH molecules is fashioned via effects of hot water vapor.

26. Device according to claim 17, in which the hydrophilic layer (52) on the surface of the print carrier has a thickness of less than 100 nm, preferably less than 10 nm.

27. Device according to any of the preceding claims, in which the cleaning and the generation of the hydrophilic layer ensues in a single process step.

28. Device according to any of the preceding claims, in which radiation is used for structuring.

29. Device according to claim 28, in which the radiation of a laser system, a laser, laser diodes, LEDs or a laser diode array is used.

30. Device according to any of the preceding claims, in which an ink separation ensues before the transfer of the ink onto the carrier material (40).

31. Device according to any of the preceding claims, in that the surface of the print carrier (10) is a generated cylinder surface or a continuous band.